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Date: June 21, 2006

Georgann S. Grunebach, Reg. No. 33,179

Attention: Mail Stop Appeal Brief-Patents
Please find attached Re: 09/325,110

Attorney Docket No. PD-990033
Filing Date: June 3, 1999

➢ BRIEF ON APPEAL (21 Pages)

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The DIRECTV Group, Inc. – RE / R11 / A109, P.O. Box 956 – 2250 E. Imperial Highway, El Segundo, CA 90245-0956

PTO/SB/17 (01-06)
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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 500.00

Complete if Known	
Application Number	09/325,110
Filing Date	June 3, 1999
First Named Inventor	Carl S. Anselmo
Examiner Name	Charles Chiang Chow
Art Unit	2685
Attorney Docket No.	PD-990033

METHOD OF PAYMENT (check all that apply)

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☑ Deposit Account Deposit Account Number: 50-0383 Deposit Account Name: THE DIRECTV GROUP, INC.

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1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	FILING FEES Small Entity Fee ($)	SEARCH FEES Fee ($)	SEARCH FEES Small Entity Fee ($)	EXAMINATION FEES Fee ($)	EXAMINATION FEES Small Entity Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims _____ - 20 or HP = _____ x _____ = _____ Extra Claims / Fee ($) / Fee Paid ($)

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims _____ - 3 or HP = _____ x _____ = _____ Extra Claims / Fee ($) / Fee Paid ($)

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If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

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SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 33,179	Telephone (310) 964-4615
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Georgann S. Grunebach, Registration No. 33,179 (Date of Signature)

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PATENT
PD-990033

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant:	Carl S. Anselmo	Date: June 21, 2006	
Serial No:	09/325,110	Group Art Unit: 2685	
Filed:	June 3, 1999	Examiner: Charles Chiang Chow	

Title: METHOD AND SYSTEM FOR PROVIDING SATELLITE COMMUNICATIONS USING ON-ORBIT PAYLOAD CONFIGURATION AND RECONFIGURATION

BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following Appeal Brief is submitted in response to the Notice of Appeal filed May 10, 2006.

06/22/2006 TL0111 00000029 500383 09325110
01 FC:1402 500.00 DA

I. Real Party in Interest

The real party in interest in this matter is The DIRECTV Group, Inc of El Segundo, California which is 34 percent owned by Fox Entertainment Group, which is approximately 82 percent owned by The News Corporation, Limited.

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-8, 11, 12, 15-18 and 21-31 stand rejected in the Final Office Action. Claims 9-10, 13-14 and 19-20 have been withdrawn from consideration.

IV. Status of Amendments

There have been no amendments filed subsequent to the Final Office Action dated February 10, 2006.

V. Summary of Claimed Subject Matter

Claim 1 is directed to a system 300 that is generally illustrated in Figure 1. The preamble of claim 1 is directed to a system 300 for providing high frequency data communications in a satellite-based communication network 306. The system 300 includes a plurality of communication satellites 302, each having uplink 314 and downlink antennas 316 capable of receiving and transmitting a plurality of signals. Each of the satellites 302 has a communication control circuit 318. The general satellite system 300, the satellites 302 and the network 306 are described in the paragraph bridging pages 4 and 5. A communication control circuit is described in the last two paragraphs of page 5.

The system includes at least one of the satellites being a reconfigurable satellite 304. The reconfigurable satellite is first described in the paragraph bridging pages 4 and 5.

The reconfigurable satellite 304 has a programmable frequency synthesizer 340 coupled to an up converter 336 and a down converter 332 is described on lines 13-17 of page 6. The reconfigurable satellite further includes a routing table 372. The routing table 372 stores tuning information therein. The routing table 372 is described on page 8, lines 15-20.

The reconfigurable satellite 304 also includes a controller 342 located on the satellite 304 coupled to the communication control circuit 318. The controller controls a frequency reconfiguration of the communication control circuit 318 through the programmable frequency synthesizer in response to the tuning information. This is described on lines 14-20 of page 8.

Claims 2-5 stand or fall together with claim 1.

Claim 6 recites that the communication control circuit comprises a time division multiple access switch 352 described on page 7, second full paragraph, and illustrated in Figure 3.

Claim 7 recites that the communication control circuit comprises a packet switch. A packet switch is illustrated in Figure 4 and described on page 8, line 26.

Claim 8 stands or falls together with claim 1.

Claims 11 and 12 ultimately depend from claim 15. Claims 11 and 12 ultimately stand or fall together with claim 15.

Claim 15 is another independent claim. Claim 15 recites a receive array 320 and a receive beam forming network 324. Claim 15 further recites a transmitter array 322 and a transmit beam forming network 328. The above four elements are described in the last two paragraphs of page 5 and are illustrated in Figure 2.

Claim 15 further recites a communication control circuit 318 for controlling communications of the satellite 302, 304. The communication control circuit 318 is an up converter and a down converter. Claim 15 further recites a reconfiguration circuit that includes an on-board computer and a routing table 372 in a similar fashion to claim 1.

Claims 16 and 17 correspond directly to claims 6 and 7 and, thus, will not be further described here.

Claim 18 is an independent method claim that includes deploying a reconfigurable satellite, transmitting reconfiguration instructions to the satellite 304, a frequency configuration of the payload of the reconfigurable satellite 304 in response to tuning information in a routing table 372 by changing an up converter frequency and down converter frequency using a programmable frequency synthesizer 340. The routing table 372 and the frequency synthesizer 340 are all illustrated in Figure 3.

Claim 18 further recites repositioning a satellite from a network position and moving the reconfigurable satellite into the network position. The movement of the satellite is described in the second full paragraph of page 9.

Claim 21 recites that the step of reconfiguring a satellite comprises changing the amplitude or phase coefficients of a transmit and receive beam. This is described in the paragraph bridging pages 8 and 9.

Claim 22 recites the further step of storing tuning information in a routing table. This is described at the end of the second full paragraph on page 8.

Claim 23 recites the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table. This is described in the second full paragraph of page 8 and in the paragraph bridging pages 8 and 9.

Claims 24 and 25 recite that moving the satellite is performed using east/west station-keeping and north/south station-keeping, respectively. This is specifically described on lines 10-14 of page 9.

Claim 26 recites the step of updating the routing table from an order wire. This is described on the first line of page 9.

Claim 27 recites updating the routing table from an RF control channel. This is described also on the first line of page 9.

Claim 28 is another independent claim directed to a method of configuring a satellite. Claim 8 recites deploying a reconfigurable satellite, storing frequency tuning information in a routing table 372. Storing the information in a routing table is described in the first two full paragraphs of page 8. Claim 28 also recites transmitting reconfiguration instructions to the satellite which is described in the paragraph bridging pages 8 and 9 and reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table by changing an up converter frequency and a down converter frequency using a programmable frequency synthesizer 340. This is described on lines 16-19 of page 6.

Claim 29 recites reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table 372. This is similar to claim 23 described above.

Claim 30 recites updating the routing table 372 from an order wire. This is described in claim 26 above. Claim 31 recites updating the routing table 372 from an RF control channel. This is described in claim 27 above.

VI. Grounds of Rejection to be Reviewed on Appeal

The following issues are presented in this appeal:

Whether Claims 1, 3-5, 11-12 and 28 are unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930).

Whether Claim 15 is unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Woolcott* (6,317,583) in further view of *Green* (5,073,930).

Whether Claim 2 is unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Wiswell* (6,205,319).

Whether Claim 6-7 and 16-17 are unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Brown* (6,157,621).

Whether Claim 8 is unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Galvin* (6,182,927).

Whether Claim 18 is unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Pizzicaroli* (5,813,634) in further view of *Green* (5,073,930).

Whether Claims 21-27 are unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Pizzicaroli* (5,813,634) in further view of *Green* (5,073,930) in further view of *Brown* (6,157,621).

Whether Claims 29-31 are unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Brown* (6,157,621).

VII. Argument

The Rejection of Claims 1-3, 5, 11-12 and 28 under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930)

Independent Claim 1

The *Hammill* reference is cited for having a routing table on page 2 of the Final Office Action. The Examiner points to the tables 1-2 illustrated in the text of the patent. Appellant respectfully submits that the tables cited by the Examiner show a beam and size, but tuning information such as frequencies (for controlling the frequency reconfiguration) are not illustrated. It is clear that the tuning information of the present application is used to tune the frequency of the control circuit through the controller. That is, the controller of Claim 1 controls "a frequency reconfiguration of the communication control circuit through the programmable frequency synthesizer." No frequency reconfigurations of beams are set forth. In Col. 4, lines 20-25, state, "A phased array antenna may also be used to generate the beams, and also provides the ability to reconfigure the antenna on the fly to transmit beams of varying sizes." While the size of the beams may be changed, no teaching or suggestion is provided for changing the frequency of the beams in response to a programmable frequency synthesizer and a routing table. In fact, Appellant agrees with the Examiner that a programmable frequency synthesizer is not illustrated in the *Hammill* reference. This is not surprising since the frequency of the beams appears not to change.

The *Green* reference is cited for teaching a programmable frequency synthesizer coupled to an up converter and a down converter. While it is true that two voltage control oscillators 222, 244, and phase lock loop chips 226, 248 are illustrated coupled to a respective down converter and up converter, there is no teaching or suggestion that the phase lock loop chip changes the

voltage control oscillator in response to a routing table. In fact, the single chip microcomputer 206 is used to change the frequency as is set forth in Col. 13, lines 27-33. There is no mention of a routing table in this reference as well.

Independent Claim 28

Claim 28 is a method claim that recites "storing frequency tuning information in a routing table" and "reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table by changing an up converter frequency and down converter frequency using a programmable frequency synthesizer." Thus, Claim 28 is similar to Claims 1 and 15 in that the reconfiguration is performed in response to the tuning information in the routing table. Therefore, Claim 28 is also believed to be allowable for the same reasons set forth above.

Dependent Claims 3-5 and 11-12

Claims 3-5 and 11-12 stand or fall together with independent claim 1.

The Rejection of Claim 15 under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Wolcott* (6,317,583) and in further view of *Green* '930

Independent Claim 15

With respect to independent Claim 15, a reconfiguration circuit is set forth that includes a programmable frequency synthesizer coupled to the up converter and down converter and a routing table having tuning information therein. The onboard computer controls the reconfiguration of the communications control circuit through the programmable frequency synthesizer in response to the tuning information. As mentioned above with respect to claim 1, *Hammill* and *Green* do not teach or suggest the programmable frequency synthesizer and routing

table combination. The *Wolcott* reference also does not teach or suggest these missing elements. The *Wolcott* reference is not set forth for these teachings. Therefore, Claim 15 is also believed to be allowable over the combination of the *Hammill, Wolcott* and *Green* references.

The Rejection of Claim 2 under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Wiswell* (6,205,319)

Dependent Claim 2

Claim 2 stands or fall together with independent claim 1.

Whether Claim 6-7 and 16-17 are unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Brown* (6,157,621)

Claims 6-7 and 16-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Green* as applied to Claims 1 and 15 above, in further view of *Brown* (6,157,621).

Claims 6 and 7 depend from Claim 1 and Claims 16-17 depend from Claim 15. The *Brown* reference also does not teach or suggest the elements missing from Claims 1 and 15 and described above. Therefore, claims 6 and 16 are believed to be allowable. Brown does describe a packet switch, as in claims 7 and 17 but only mentions TDMA not the use of a TDMA switch. Appellant therefore respectfully requests the Board to Reverse this rejection as well.

The Rejection of Claim 8 under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Galvin* (6,182,927)

Claim 8 stands or falls together with claim 1.

Whether Claim 18 is unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Pizzicaroli* (5,813,634) in further view of *Green* (5,073,930)

The *Pizzicaroli* reference also does not teach or suggest reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information or routing table by changing an up converter and a down converter frequency using a reprogrammable frequency synthesizer. Appellant therefore respectfully requests the Examiner to reconsider this rejection as well.

The Rejection of Claims 21-27 under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Pizzicaroli* (5,813,634) in further view of *Green* (5,073,930) in further view of *Brown* (6,157,621)

Dependent Claim 21

Claim 21 recites that the step of reconfiguring a satellite in claim 18 comprises changing the amplitude or phase coefficients of a transmit and receive beam. The base step of reconfiguring in claim 18 recites reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in a routing table by changing an up converter and down converter frequency using a programmable frequency synthesizer. Appellant admits that steering beams using amplitude or phase coefficients is known. However, the Examiner fails to allege that any of the three references teaches that reconfiguring a satellite comprises changing the amplitude or phase coefficients of a transmit and receive beam in response to tuning information in a routing table. Appellants, therefore, respectfully request the Board to reverse the Examiner's position with respect to claim 21.

Dependent Claim 22

Claim 22 recites the further step of storing tuning information in a routing table. This claim stands or falls together with claim 18.

Dependent Claim 23

Claim 23 recites that the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in a routing table. Claim 23 is more specific than claim 21 described above. Claim 21 recites that the amplitude or phase coefficients are changed in response to the tuning information in the routing table. As mentioned above, there is no teaching or suggestion provided by the Examiner for the combination of the amplitude or phase coefficients in the step of reconfiguring. Therefore, Appellants respectfully submit that claim 23 is also allowable for the same reasons set forth above with respect to claim 21.

Dependent Claims 24 and 25

Claims 24 and 25 stand or fall together with independent claim 18.

Dependent Claim 26

Claim 26 recites that the routing table is updated from an order wire. The Examiner points to column 43, lines 46 to column 44, line 9, and column 49, lines 10-20 for this teaching. Appellants can find no teaching or suggestion for an order wire in these passages. Therefore, claim 26 is believed to be allowable.

Dependent Claim 27

The Examiner also points to the same sections with respect to claim 26 for the RF control channel. Appellants can find no teaching or suggestion for an RF control channel in these passages as well. Therefore, claim 27 is believed to be allowable.

Whether Claims 29-31 are unpatentable under 35 U.S.C. §103(a) over *Hammill* (6,173,179) in view of *Green* (5,073,930) in further view of *Brown* (6,157,621)

Dependent Claim 29

Claim 29 is similar to claim 23 above. As mentioned above, there is no teaching or suggestion provided in the references for this proposition.

Dependent Claim 30

Dependent claim 30 corresponds to claim 26 and is believed to be allowable for the same reasons set forth above.

Dependent Claim 31

Claim 31 corresponds to claim 27 described above and is believed to be allowable for at least the same reasons.

Conclusion

For the foregoing reasons, Appellants respectfully request that the Board direct the Examiner in charge of this examination to withdraw the rejections.

Please charge any fees required in the filing of this appeal to deposit account 50-0383.

Respectfully submitted,

By: _____
Georgann S. Grunebach, Reg. No. 33,179
Attorney for Appellants

Dated: June 21, 2006

The DIRECTV Group, Inc.
RE / R08 / A109
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VIII. Claims Appendix

1. (Previously Presented) A system for providing high frequency data communications in a satellite-based communications network, the system comprising:

a plurality of communications satellites each having uplink and downlink antennas capable of receiving and transmitting a plurality of signals, each of said satellites having a communication control circuit;

at least one of said satellites being a reconfigurable satellite having a programmable frequency synthesizer coupled to an up converter and a down converter of a communications control circuit;

a routing table storing tuning information therein;

a controller located on said satellite coupled to said communications control circuit, said controller controlling a frequency reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.

2. (Original) A system as recited in claim 1 wherein each of said satellites further comprising a beam forming network coupled to said uplink and downlink antennas.

3. (Original) A system as recited in claim 1 wherein said communications control circuit comprises an up converter and a down converter.

4. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a transponder.

5. (Original) A system as recited in claim 4 wherein said transponder comprises an up converter and a down converter.

6. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a time division multiple access switch.

7. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a packet switch.

8. (Original) A system as recited in claim 1 wherein said plurality of communications satellites have an orbit selected from the group consisting of a LEO, MEO and GSO.

9-10. (Canceled)

11. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a transponder.

12. (Previously Presented) A payload circuit as recited in claim 11 wherein said transponder comprises the up converter and the down converter.

13-14. (Canceled)

15. (Previously Presented) A payload circuit for a satellite comprising:

a receive array;

a receive beam forming network;

a transmit array;

a transmit beam forming network;

a communications control circuit for controlling communications of said satellite, said communications control circuit being an up converter and a down_converter; and

a reconfiguration circuit coupled to the communications control circuit for reconfiguring the communications control circuit, said reconfiguration circuit comprising a programmable frequency synthesizer coupled to the up converter and down converter, an on-board computer and a routing table having tuning information stored therein, said on-board computer controlling a reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.

16. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a time division multiple access switch.

17. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a packet switch.

18. (Previously Presented) A method of configuring a satellite system having a plurality of satellites comprising the steps of:

deploying a reconfigurable satellite;

transmitting reconfiguration instructions to said satellite;

reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in a routing table by changing an up converter frequency and down converter frequency using a programmable frequency synthesizer;

repositioning a satellite from a network position; and

moving the reconfigurable satellite into the network position.

19-20. (Canceled)

21. (Original) A method as recited in claim 18 wherein the step of reconfiguring a satellite comprises changing the amplitude or phase coefficients of a transmit and receive beam.

22. (Previously Presented) A method as recited in claim 18 further comprising storing tuning information in a routing table.

23. (Previously Presented) A method as recited in claim 18 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.

24. (Previously Presented) A method as recited in claim 18 wherein moving the reconfigurable satellite is performed using east/west station keeping.

25. (Previously Presented) A method as recited in claim 18 wherein moving the reconfigurable satellite is performed using north/south station keeping.

26. (Previously Presented) A method as recited in claim 18 further comprising updating the routing table from an order wire.

27. (Previously Presented) A method as recited in claim 18 further comprising updating the routing table from an RF control channel.

28. (Previously Presented) A method of configuring a satellite comprising:

deploying a reconfigurable satellite;

storing frequency tuning information in a routing table;

transmitting reconfiguration instructions to said satellite;

reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table by changing an up converter frequency and down converter frequency using a programmable frequency synthesizer.

29. (Previously Presented) A method as recited in claim 28 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.

30. (Previously Presented) A method as recited in claim 28 further comprising updating the routing table from an order wire.

31. (Previously Presented) A method as recited in claim 28 further comprising updating the routing table from an RF control channel.

IX. Evidence Appendix

None

X. Related Proceedings Appendix

None